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LCD CONTROLLERS

AFHOO LCD CONTROLLER
EMULATOR LCD CONTROLLER
CYBERLIGHT LCD CONTROLLER
TECHNOBEAM LCD CONTROLLER
INTELLABEAM LCD CONTROLLER
STUDIO COLOR LGD CONTROLLER



Overview of LCD Controllers

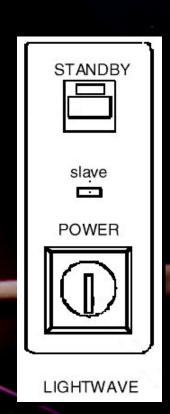
- 9 memories
 - (6 Memories for EMULATOR LCD CONTROLLER)
- 99 Pages in each memory
- Up to 1023 Possible Presets
- Create Static Scenes (Pages)
- Create Sequences (Pages that Loop)
- RAM Card Backup
- 12 Submasters
- 8 User-Programmable Macros
- Audio Input Jack
- Analog Input Connectors
- Midi In and Thru Ports
- Master/Slave Capabilities



Hands On Exercise

- Power up the Controller
 - The STANDBY LED will be on; this is the DEFAULT mode upon startup of Controller
- Toggle the Standby Key OFF

DO NOT touch JOYSTICK upon powering up controller due to initialization procedure







• Front Panel Overview

LCD Controller Front Panel

- Power Keyswitch
- Slave Mode Indicator LED
- Standby Key
- Address/Preset Select Key
- Address/Preset Keypad
- LCD Window
- Construct (Up/Down) Keys
- Construct Keys
- LCD Power Keyswitch



LCD Controller Front Panel

- Menu Key
- Cursor Up/Down Left/Right Arrow Keys
- Page Up/Down Arrow Keys
- Joystick
- Erase Key
- Record Key
- Select Key
- Home Key





- Auto Advance Key
- Rate Knob
- Audio Level Indicator LED
- Audio Knob
- User Keys



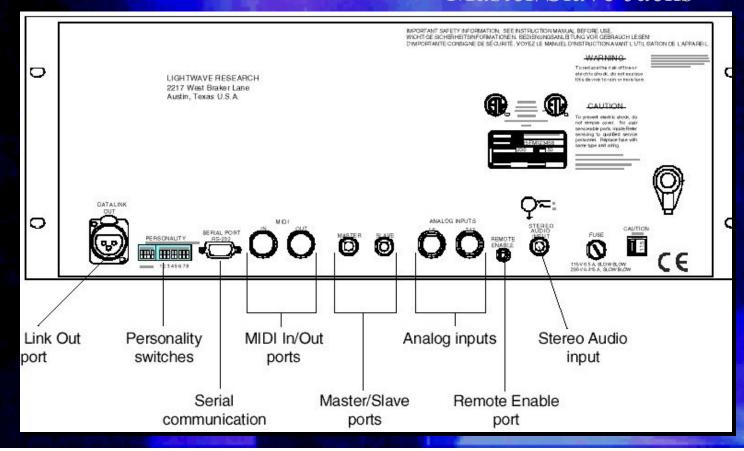




• Rear Panel Overview

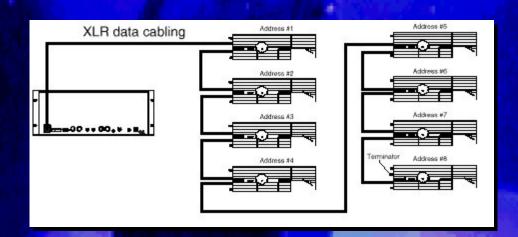
LCD Controller Rear Panel

- Data Link Out
- Personality DIP Switches
- RS232 Serial Port
- Midi IN & OUT Ports
- Master/Slave Jacks



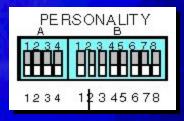
Data Link Out

- 3 PIN XLR
 - Pin 1=Shield
 - Pin 2=Negative
 - Pin 3=Positive
- Daisy Chain all units



Personality DIP Switches

- A side is reserved for future use
- B side defines controller's mode of operation
- Personality B DIP Switch Settings
 - 1-ON=SLAVE MODE
 - 2-NOT USED
 - 3-ON=PRESET ACCESS
 - 4-NOT USED
 - 5-ON=BINARY ACCESS
 - 6-ON=INDEPENDENT
 - 7-NOT USED
 - 8-NOT USED



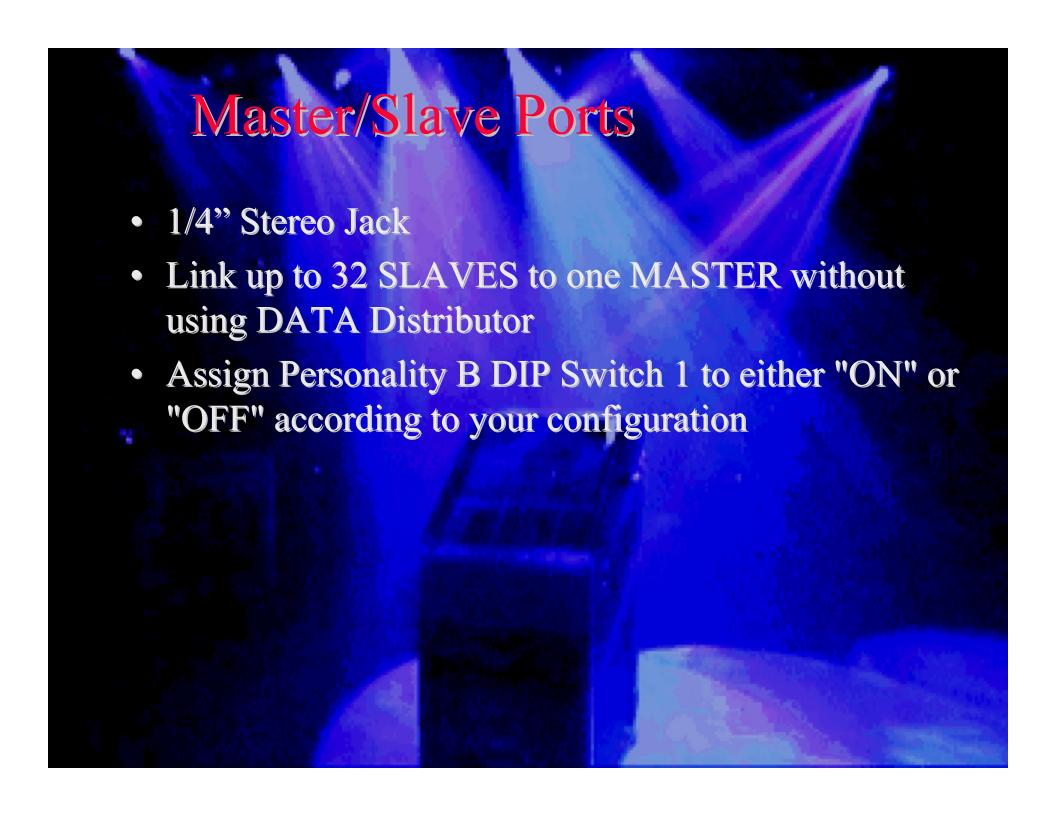


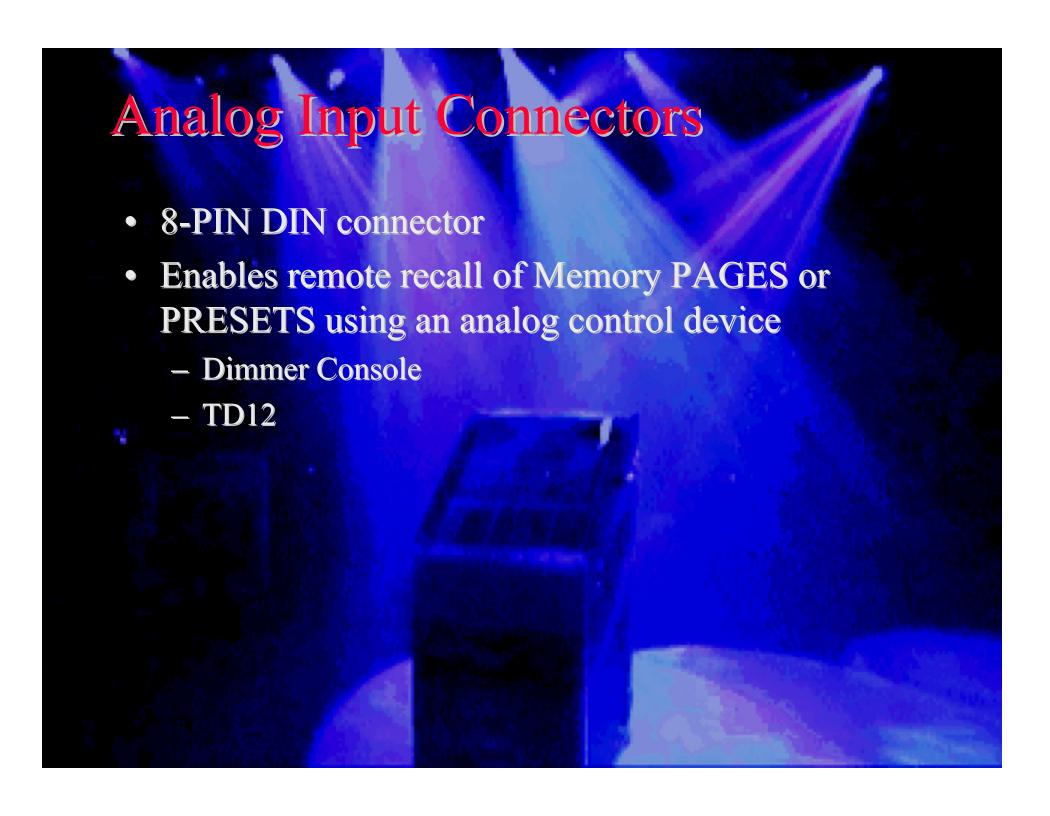
- LWB Backup Program
 - Backup data to a computer
- LCC software hookup to a MAC, PC

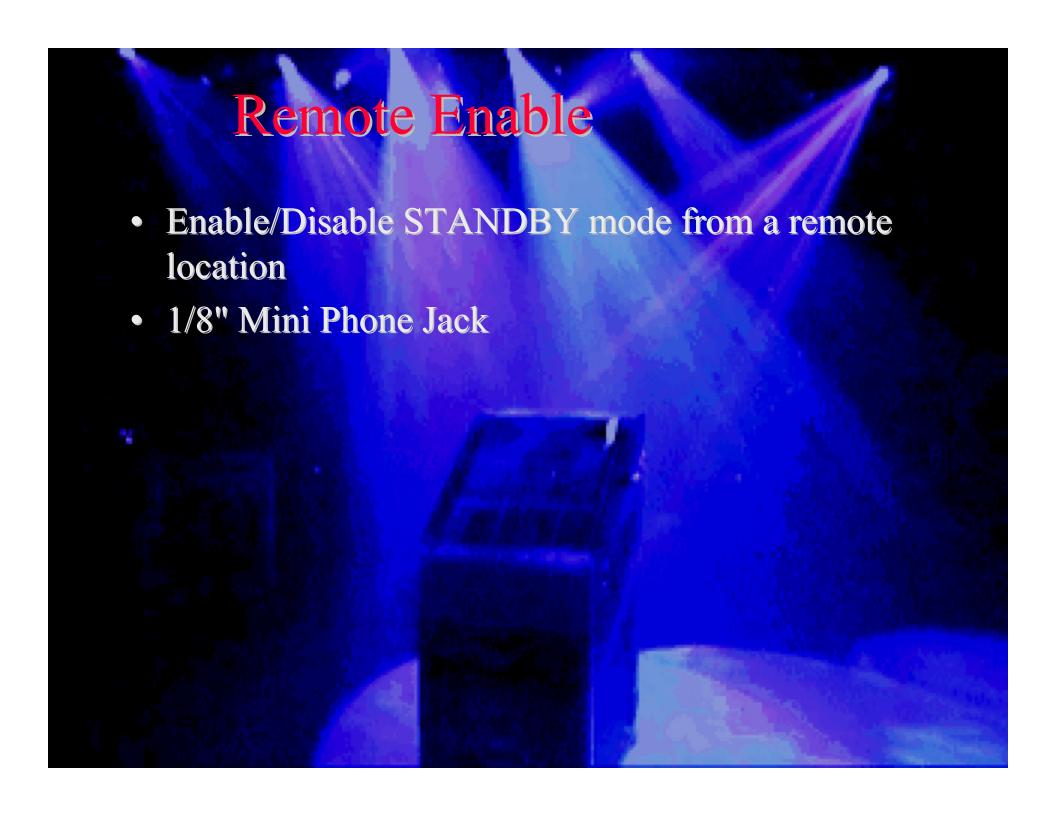


MIDI IN & OUT Ports

- Controller supports MIDI SHOW CONTROL "GO"
 COMMANDS
- Also supports MIDI System Exclusive Backup
- MIDI CUE numbers are one-for one with the Controller's PRESET numbers
- Controller only accepts whole CUE numbers
- MIDI OUT is switchable between OUT & THRU;
 OUT is DEFAULT.
- When RS 232 PORT is active, MIDI OUT functions as MIDI THRU.













LCD CONTROLLER

Programming Quick Start



Topics:

Pages

Address

Address Mode

Memories

Preset Mode

Presets

Frequently Used Terms

• Fixture

The Automated lighting device controlled by an LCD Controller

Constructs

 Features of the Fixtures: Gobo, Color, Dim, Gate and Position are examples of Constructs

Parameters

Values for the Constructs



What is a Page?

- Pages are the building blocks of SCENES
- A Page is one static look specifying CONSTRUCTS for one or more Fixtures
- The LCD Controller has 891 programmable Pages (Cyberlight, Studio Color, Technobeam, AF1000, Intellabeam)

Address Mode/IMP Mode

- To program a PAGE, you must be in ADDRESS MODE
 - Toggle the ADDRESS/PRESET key until the ADDRESS
 LED is on:

 ADDRESS

- In ADDRESS MODE you may select an ADDRESS or several ADDRESSES to be edited on the PAGE
- Address Mode is also known as IMP Mode
 - Intensity, Memory, and Page Information is displayed in the LCD Window

What is an Address?

- An ADDRESS is a unique number that you assign to each fixture connected to the controller
 - The number of Addresses an LCD Controller can control is unique to the specific type of fixture you are controlling
- Fixture Addresses are assigned via DIP Switches or Menus on the Fixtures



Selecting an Address

- To select an Address to edit:
 - Press the SELECT Key (located near bottom center of Controller)
 - Press the Address Number Key of the Fixture to be edited
 - The SELECT and Address Number Keys selected will flash simultaneously
- To select a block of Fixtures, use RANGE SELECT
 - Simultaneously press both the highest and lowest numbered address keys of the desired range

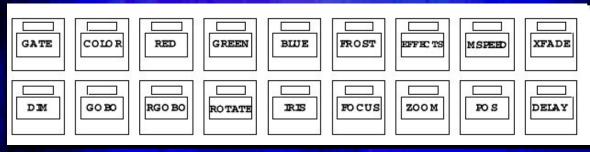
NOTE: Pressing SELECT again will abort this action

Editing a Page

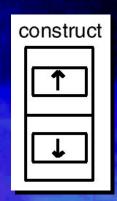
Adjusting Constructs

To edit an Address once selected, press the desired Construct Key of the Construct you want to change; Construct Keys are located near the Address Keys and are labeled GOBO, COLOR,

DIM, etc.



- NOTE: GATE is defaulted to CLOSED. You must open the gate in order to see the output of the lamp
- Use the CONSTRUCT UP/DOWN Arrow Keys to change the value of the active Construct



Recording a Page

- Make all desired value changes to all Constructs for the selected Fixture
- - NOTE: You must press RECORD after each Fixture is finished; otherwise, when a second Fixture is selected, it will automatically accept all Construct Values of the first Fixture.
- Select the next Address on the Page and continue to adjust Constructs. When finished, press RECORD

Programming a Page

Review

To record a PAGE using the 4-STEP method:

- From ADDRESS MODE:
 - 1. Press SELECT
 - 2. Select ADDRESS(ES)
 - 3. EDIT CONSTRUCTS
 - 4. Press RECORD
- You can ABORT at any time before pressing RECORD by pressing the SELECT key again

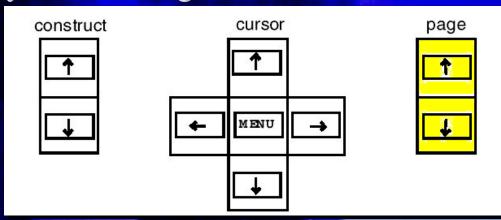


Building a Page

- Program Page 1:
 - Cyberlight in Gobo 2, RGB Yellow, MSpeed 93 with XFade of 1.0 sec

Changing Pages

- To change to another PAGE, press the PAGE UP/DOWN Arrow keys to select the desired PAGE number
 - NOTE: PAGES loop around after 99 back to 1 and from 1 to 99 without having to scroll through all PAGES in between
 - Press and HOLD the PAGE UP/DOWN Arrow key to quickly scroll through the 99 PAGES



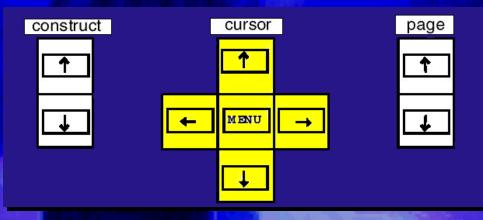


Building a Page

- Program Page 2
 - Cyberlight in Gobo 2, RGB Cyan, Mspeed 93 with XFade of 1.0 sec. Move image to different position in room.

Pages and Memories

- The LCD Controller's data storage is sub-divided into 9 sections. Each one of these sections is called a MEMORY
- Each MEMORY contains 99 PAGES
- Press the CURSOR UP/DOWN Arrow Key (located above and below the MENU Key) to select a different MEMORY



LCD Controller Hierarchy

LCD Controller Internal Memory

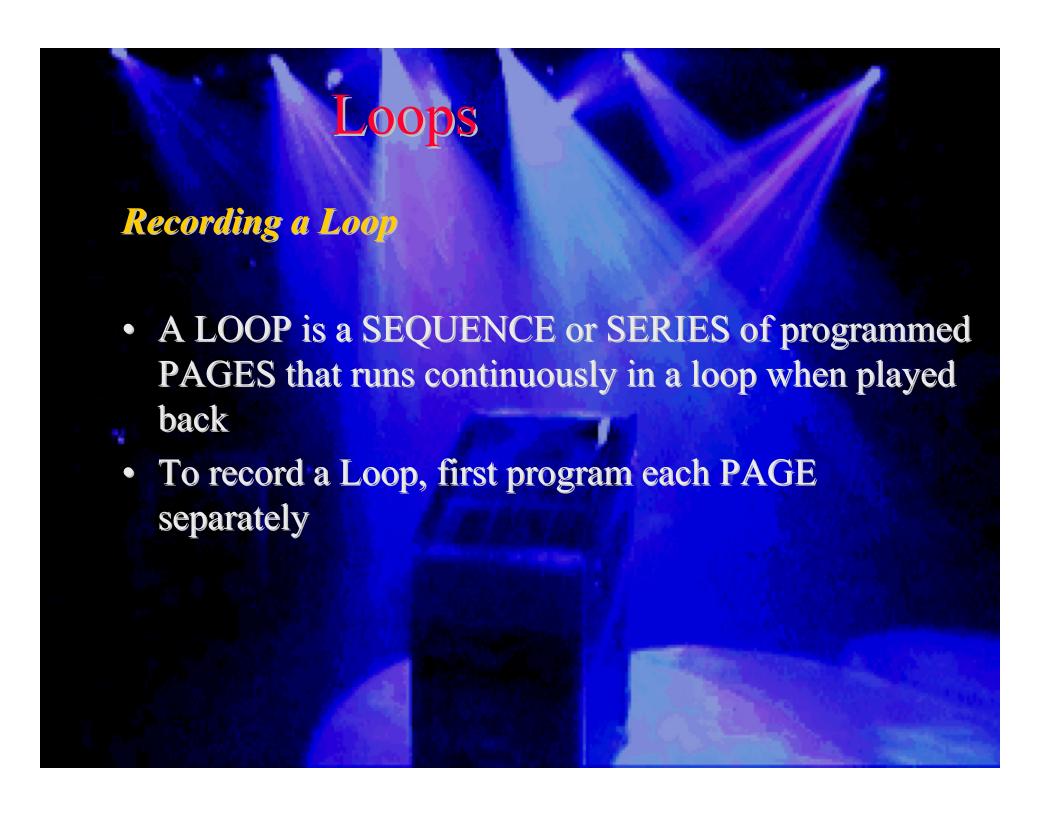
- Memory 1
 - Pages 1-99
- Memory 2
 - Pages 1-99
- Memory 4
 - Pages 1-99
- Memory 5
 - Pages 1-99

- Memory 6
 - Pages 1-99
- Memory 7
 - Pages 1-99
- Memory 8
 - Pages 1-99
- Memory 9
 - Pages 1-99



Building Pages in Different Memories

 Program Page 1 in Memories 2-9 using a different Color and Gobo Combination on each Page for the Cyberlight. Set Mspeed to 95 and XFade for 1.2 sec on each Page





Building a Loop

- Program Memory 1 Pages 5-8 using Cyberlight.
 - On each Page chose the same Color and Gobo combination, and set MSpeed to be 94.

Creating a Loop

- Every LOOP must be bracketed with a NON-INITIALIZED PAGE before the first recorded PAGE and after the last recorded PAGE of the sequence
- To record a NON-INITIALIZED PAGE (NIP):
 - Press SELECT, ERASE, ERASE
- It is not necessary to record an NIP before Page 1 or after Page 99
- NOTE: all Pages of a Loop must be in the same Memory and in sequential order



NIP

• Program an NIP on Memory 1 Pages 4 & 9

Playing Back a Loop

- Go to any recorded Page between the first and last NIP
- Press AUTO Key
 - Advances PAGES automatically at rate set by RATE KNOB
- Adjust the RATE KNOB



- Delay time programmed into the PAGE is added to the rate set by RATE KNOB
 - Programmed DELAY times are completed before PAGE advancement regardless of the RATE KNOB setting



Running a Loop

• Playback the Loop recorded on Memory 1 Pages 4-8

Recording a Preset

• From ADDRESS Mode, select the PAGE or PAGES to be recorded as a PRESET using PAGE UP/DOWN Arrow keys and Press the Auto Knob

NOTE:

ADDRESS

SEQUENCES MUST BE RUNNING TO BE RECORDED CORRECTLY

- Toggle to PRESET mode
- Press SELECT
- SELECT the PRESET NUMBER KEY where you want to record
- Press RECORD

Recording a Preset

- Record the Loop recorded on Memory 1 Pages 4-8 onto Preset #1
- Record Memory 3 Page 1 onto Preset #2

Preset Playback

- Toggle ADDRESS/PRESET mode key to PRESET mode
- Press the PRESET number key of your choice
- The preset plays back automatically, including the RATE knob setting (Loop)
- There are multiple BANKS of Presets
 - While in Preset Mode, use the Menu Cursor Left/Right
 Keys to navigate the Banks of Presets
- Total number of Presets=1023



Banks of Presets

Record Memory 4 Page 1 into Bank 2 Preset # 1

Advanced Programming Features



- Position Memories
- Page Copy
- Block Copy
- Address Parameter Copy
- MSpeed for Color and Gobo
- Erasing a Page (Blackout Page)

Position Memory

- Allows a PAGE to reference another PAGE for PAN and TILT Position information
- 99 PAGES of Memory 9 are designated as reference pages or POSITION MEMORIES (also called PRESET FOCUSES)
- Assign these positions to a selected address by pressing the POS key, then selecting a position number using the CONSTRUCT Up/Down Arrow Keys



Position Memory 9

- Record A Position on Memory 9 Pages 1-4
- Re-record Memory 1 Pages 4-8 and change the POS values on each Page to use Positions 1-4

Position Memory 9

- If a Position is changed on a reference PAGE in Memory 9, all PAGES referring to that Position will automatically update
- * It is recommended to build all Pages using Positions from Memory 9; this reduces the amount of time necessary in updating all Pages if a Position is changed

Updating Positions in Memory 9

- Record a different Position for the Cyberlight on Memory 9 Pages 1-4
- Playback the Preset stored in Bank 1 Preset 1 to see the same Loop but with new Positions

Copying Features

- Entire PAGE to another PAGE in any memory
 - PAGE COPY
- Block of PAGES to another block of PAGES in any memory
 - BLOCK COPY
- Copy parameters of one ADDRESS to another ADDRESS(ES)
 - PARAMETER COPY

Page Copy

- From ADDRESS Mode, choose PAGE to be copied
- Press SELECT
- Use PAGE UP/DOWN keys to select destination PAGE
- Press RECORD

NOTES:

- Use PAGE COPY to quickly get all Construct information for all Fixtures from one PAGE to another
- You may also use PAGE COPY to copy a PAGE from one MEMORY to another

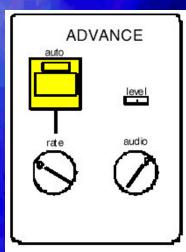
Page Copy

- Using Page Copy, copy Memory 2 Page 1 to Memory 2 Page 3
- Change the Gobo on Memory 2 Page 3 and record

Block Copy

• From ADDRESS mode, choose any PAGE within the group of pages to be copied

- Press SELECT
- Press the AUTO key 3 times
- Use PAGE UP/DOWN arrow keys to select Destination Page
- Press RECORD



Block Copy

- Block Copy Memory 1 Pages 4-8 to Memory 1 Pages 10-13
- Change the Color on the Cyberlight on the newly copied Pages 10-13
- Record an NIP on Memory 1 Page 14
- Record this new Loop to Bank 1 Preset 3

Reverse Block Copy

- Copies the series of Pages in reverse order so that the first Page being copied becomes the last Page after copied
- To execute the Reverse Block Copy, use the same steps to do a Block Copy and then:
 - After selecting the destination Page, press the CONSTRUCT UP/DOWN arrow keys to toggle between COPY and COPY REVERSE
 - Press Record to finish

Reverse Block Copy

- Reverse Block Copy Memory 1 Pages 10-13 to Memory 2 Pages 5-8
- Record NIPs on Memory 2 Pages 4 & 9
- Record this new Loop on Bank 1 Preset 4

Address Parameter Copy 1

- Copy Parameters from One Address to Another Address on the SAME PAGE
 - Press SELECT
 - Select source ADDRESS
 - Select Construct Parameters to be copied(press the corresponding CONSTRUCT keys)
 - Select destination ADDRESS(ES)
 - Press RECORD



Address Parameter Copy on Same Page

Using Address Parameter Copy, copy Cyberlight
 Constructs of Address 1 to Address 2

Address Parameter Copy 2

- Copy Selected Addresses from One Page to Another Page
 - Select source ADDRESSES to be copied
 - Press the PAGE UP/DOWN keys and select the destination PAGE
 - Press RECORD
- This applies ONLY when the controller is set for "SHARE ALL CONSTRUCTS UNTIL SELECTED" from the EDIT/COPY menu item

Address Parameter Copy of Same Address to Different Page

- Copy all Cyberlight Constructs for Address #2 of Memory 1 Page 1 to Memory 1 Page 15
- Record this new Page to Preset 2 in Bank 2

Address Parameter Copy 3

Forced Parameter Copy

- Copy selected Constructs of one Address from one PAGE to Another PAGE: POSITION COPY
 - PRESS AND HOLD SELECT KEY
 - Select source ADDRESS
 - Select CONSTRUCTS to be copied
 - PAGE UP/DOWN to select the destination PAGE
 - Press RECORD

Forced Parameter Copy

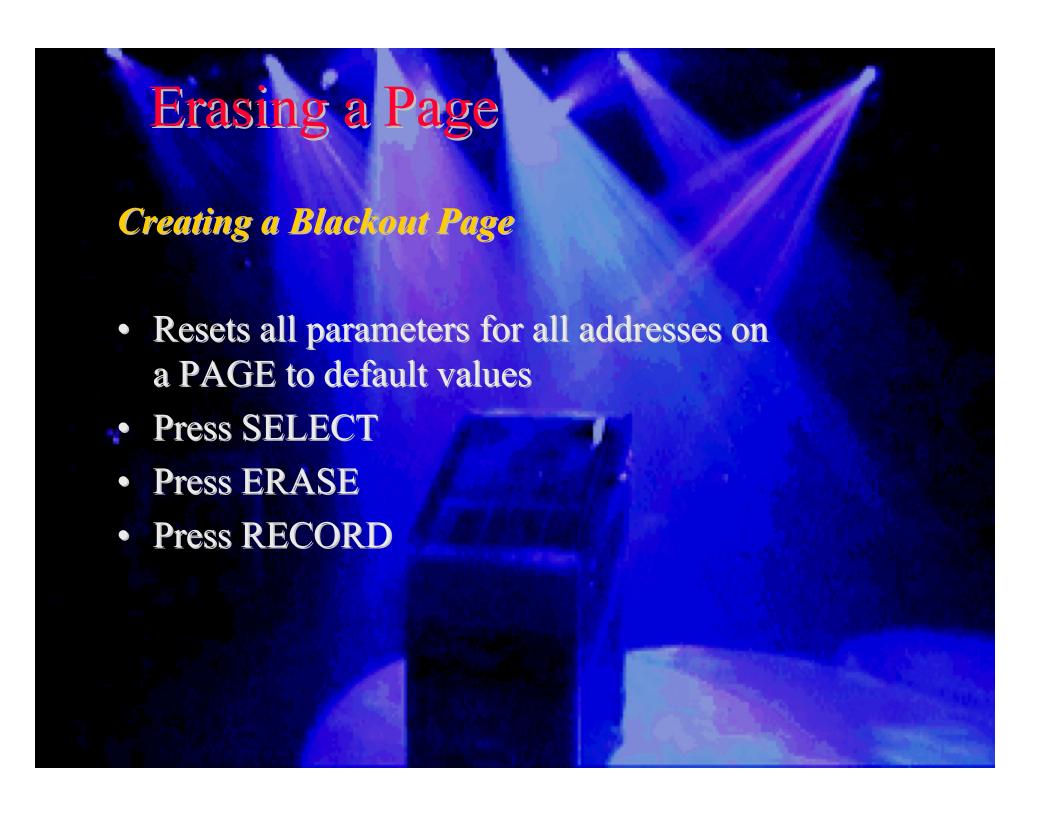
- Copy only Gate & Color information for Cyberlight Address #1 on Memory 1 Page 6 to Memory 1 Page 16
- Record this new Page to Preset 3 in Bank 2

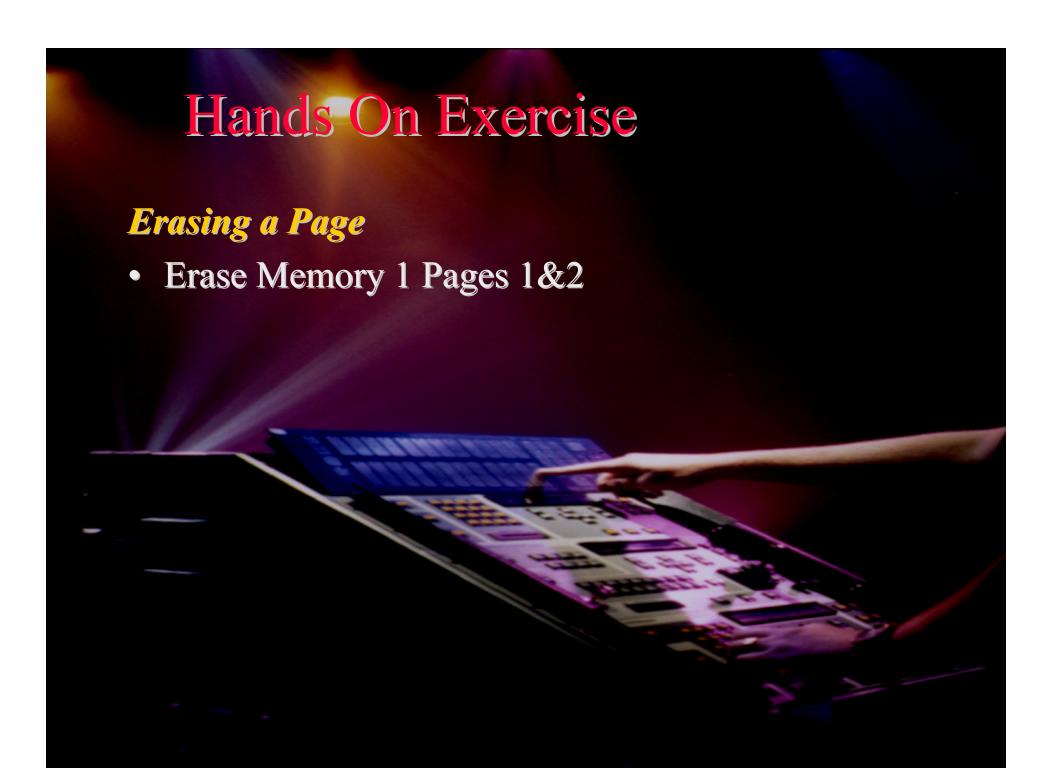
MSPEED

- MSpeed is changing from one Color or Gobo on the wheel to another Color or Gobo on the wheel at the same rate of change as the speed of the mirror movement
- Changing from one wheel position to a different wheel position has two options
 - FAST CHANGE
 - MSPEED CHANGE
- Access Mspeed for Color and Gobo through the Menu by pressing the Construct Key and then pressing the Cursor Right Key to Mspeed option

Using MSpeed

- 1. Record Memory 3 Page 2
 - Cyberlight Color 1 Gobo 2 Mspeed 90
- 2. Page Copy up to Page 3
- 3. Change the Cyberlight to Color 2 and assign MSpeed to the Color Wheel
- Record both Pages to Presets 5 & 6 in Bank 1
- Playback each Preset and examine the MSpeed change





Additional Features of the LCD Controller



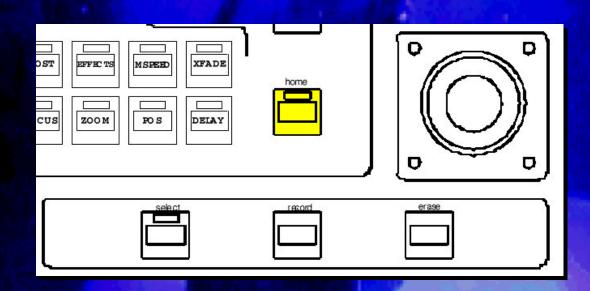


- Viewing an Address
- Address Lockout
- Master/Slave Capabilities

- Grand Master
- Instant Blackout
- Audio Playback Effects (User Keys)
- Macros

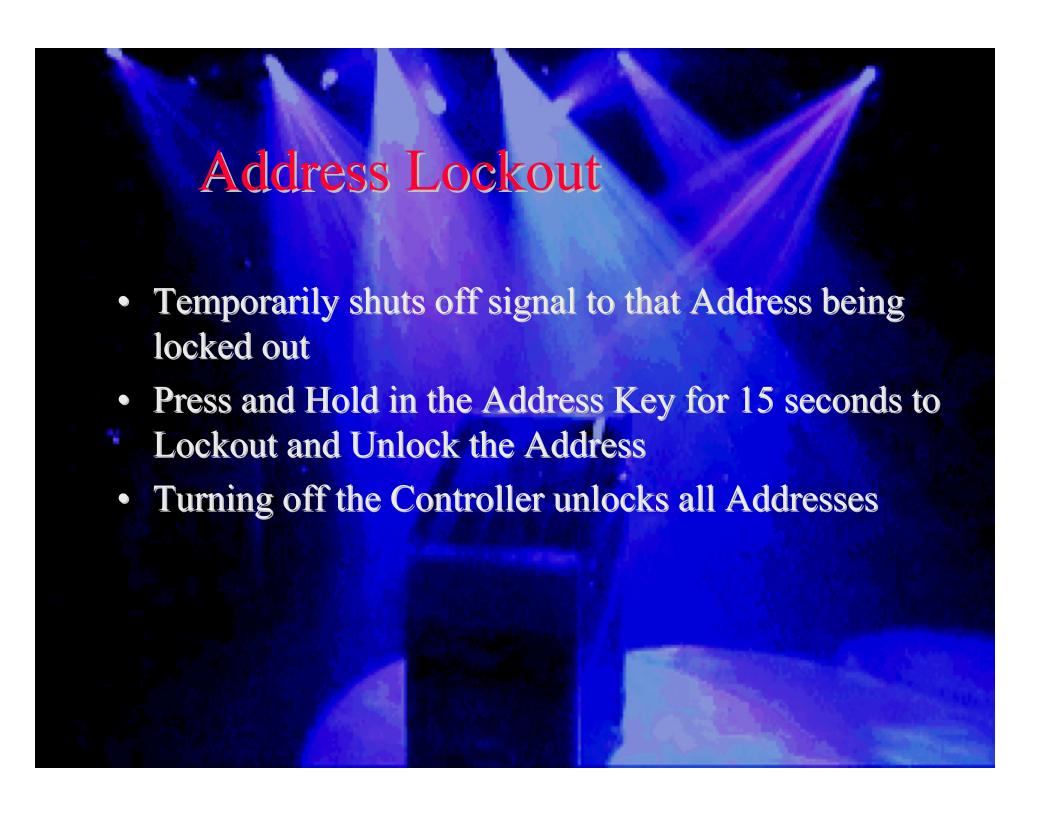
Home Key

- Press the HOME key and the Address of the Fixture you want to reset
- Pressing HOME a second time will turn off the flashing LED and allow playback of Pages or Presets to continue while the selected Fixture resets



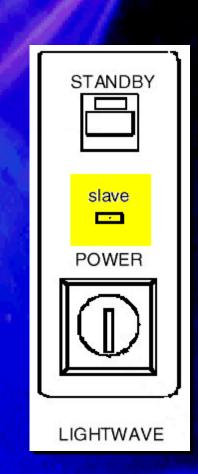
Viewing an Address on a Page

- To instantly see the Construct Parameters of an Address while in Address mode, press and hold the Address key.
- All Parameters will be displayed in the LCD window
- CAUTION! Holding the Address Key in for 15 seconds will result in ADDRESS LOCKOUT, and signal will be shut off to the fixture



MASTER/SLAVE

- Using Master/Slave increases the number of individual Addresses that can be controlled
- Slave Mode Requires Personality B DIP Switch #1 ON
 - SLAVE Mode Indicator LED will be on
- Slaved controllers only allow programming features
 - PLAYBACK features are DISABLED
- Master Controller controls PAGE AND PRESET to be played back







- Provides an instant blackout feature
- Closes GATES of all Fixtures
- Page advancement is halted
- All other functions are available



Audio Input Playback

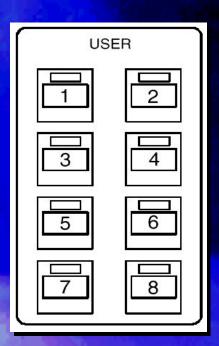
- The LCD Controller can receive an external stereo source to control playback of recorded Pages
- Audio input playback affects how recorded Pages play back regardless of whether those Pages are part of a Loop or not
- To use the Audio effects:
 - Plug a stereo source into the Stereo Audio Input connector on the Rear Panel
 - Select a Recorded Page or Pages
 - Select a User Key effect

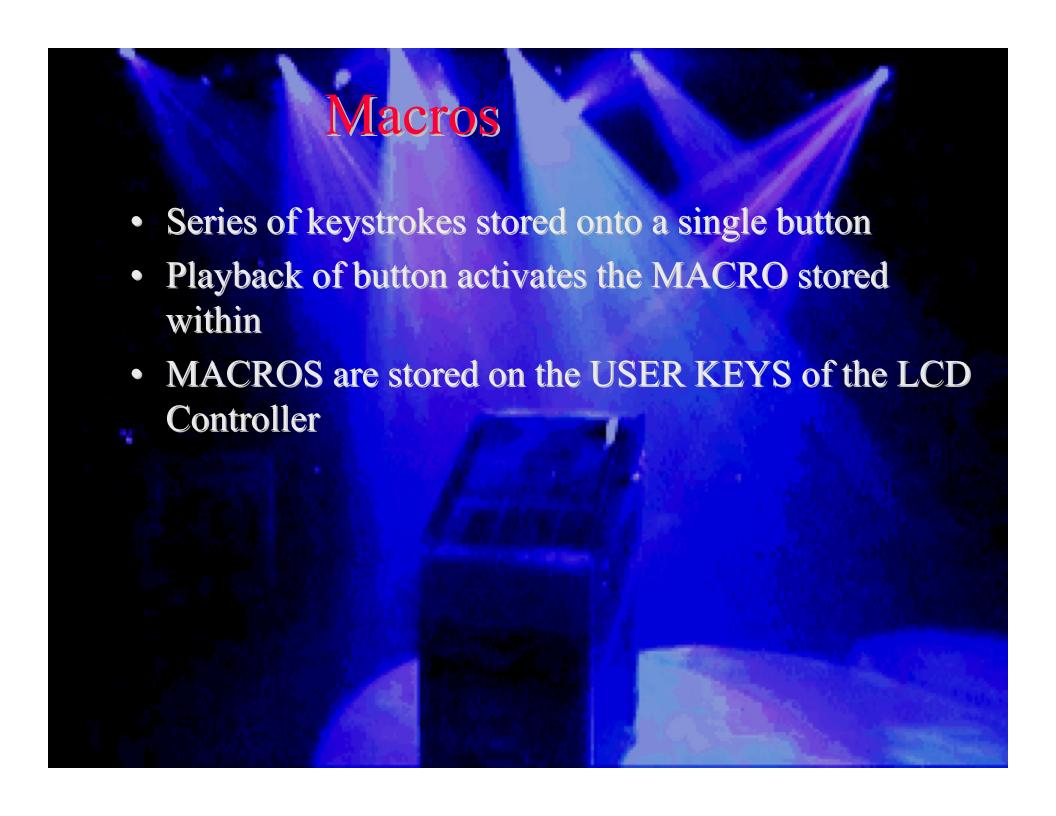
Audio Level Indicator LED & Audio Knob

- LED displays the strength of the AUDIO INPUT SIGNAL
- Knob adjusts the controller's sensitivity to the AUDIO INPUT SIGNAL
- Signal is necessary to use the controller's built in AUDIO ADVANCE Functions and EFFECTS
 Functions

User Keys

- Pre-Programmed Audio Effects and Page Advancement Effects
 - USER 1 Random Advance Key (use with Auto Advance Key and/or All-Mem Playback)
 - USER 3 Audio Advance With Beat
 - USER 5 Audio Halt With Beat
 - USER 2 Color Modulate
 - USER 4 Gobo Modulate
 - USER 6 Dim Modulate





Macros/USER Key Programming

- Three States of the USER Keys
 - PLAYBACK USER KEY
 - EDIT USER KEY
 - ABORT USER KEY
- Playback a recorded USER Key by pressing the USER Key once (Press it again to STOP PLAYBACK of Audio Effect)
- To enter the EDIT menu, press and HOLD the USER Key in; RELEASE when EDIT is displayed in the LCD window
- ABORT PLAYBACK and EDIT by holding the USER Key in until ABORT is displayed

Recording a USER KEY

- Press and HOLD User Key to be recorded until EDIT USER KEY is displayed
- Press CURSOR RIGHT key 2 times to RECORD
- Press CURSOR DOWN key to start recording
- EXECUTE keystrokes to be recorded as the MACRO
- Press CURSOR RIGHT Key 2 times to STOP RECORD
- Press CURSOR DOWN Key to stop recording



Macros

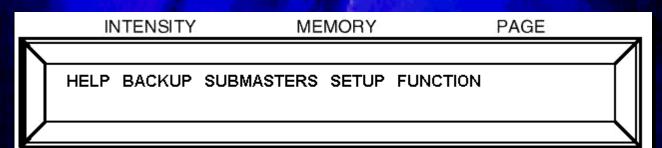
Make a Macro for executing a Page Copy



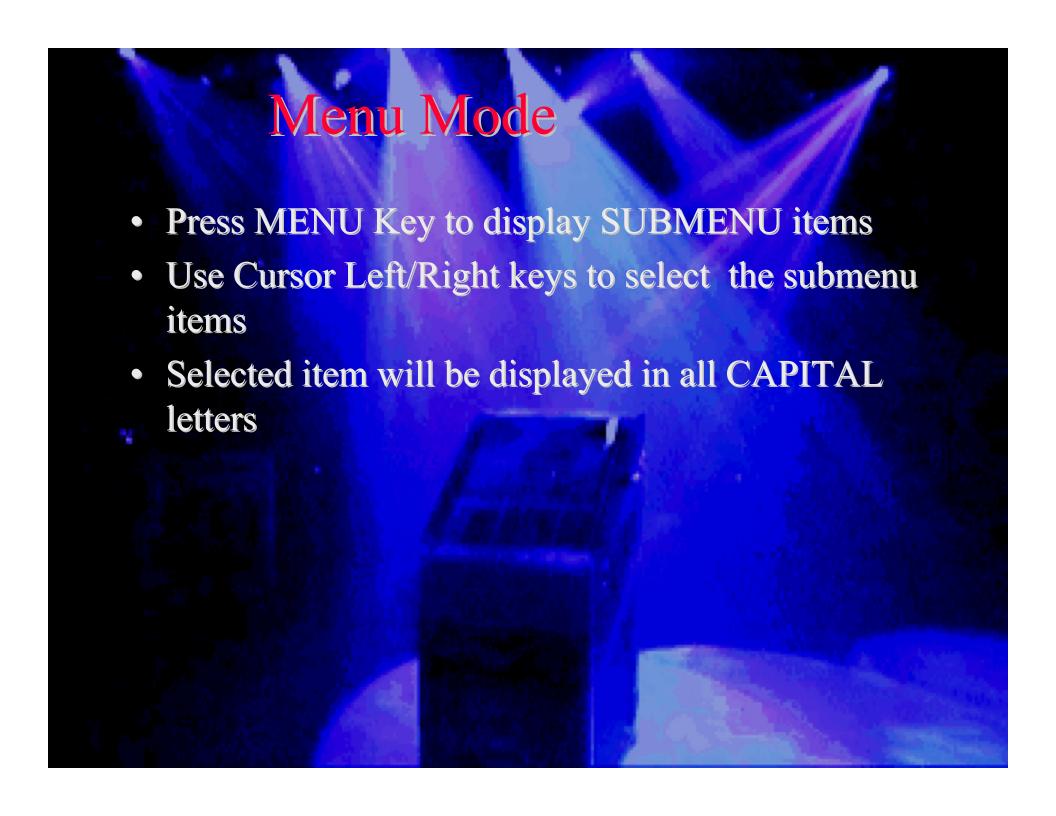
LCD Controller Menu Features

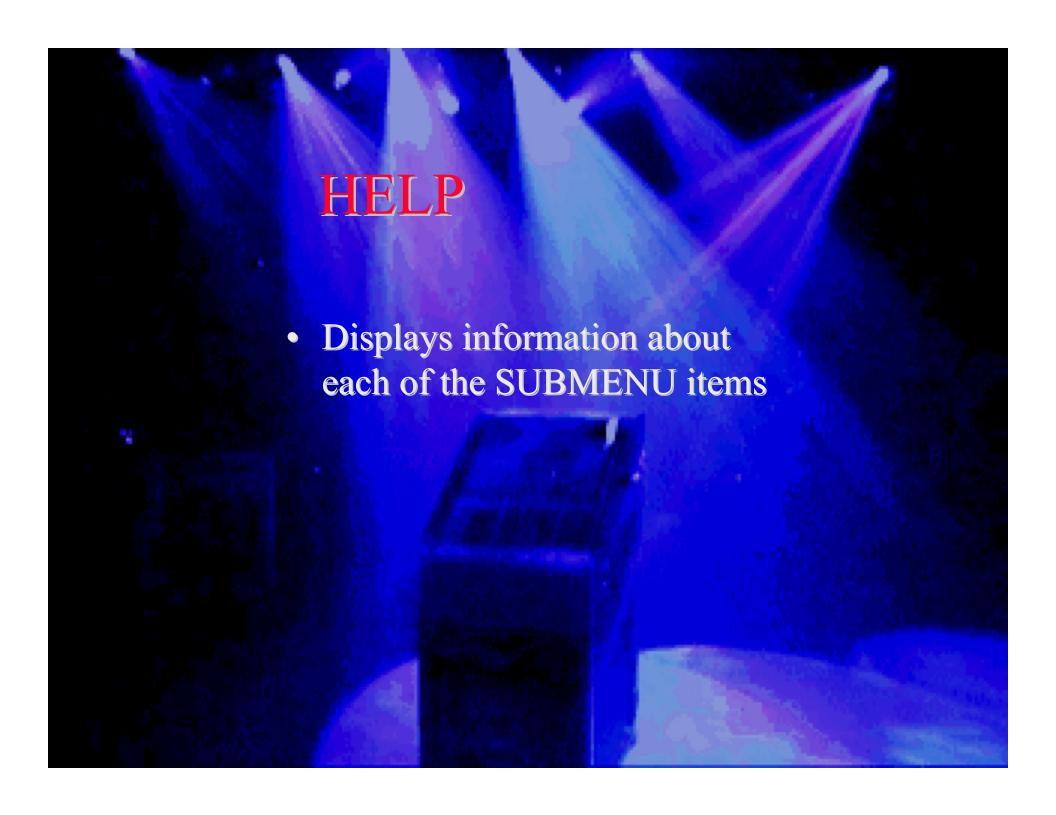
Menu Mode

- Menu provides options for you to define the characteristics of the controller
- Menu also provides some shortcut methods for some controller functions
- ITEMS INCLUDE:



- HELP
- BACKUP
- SUBMASTERS
- SETUP
- FUNCTION





Backup

- Backup Options include:
 - OS to RAMCard
 - Transfer LCD Controller Operating System to another controller
 - Save to RAMCard
 - Save the LCD Controller's internal RAM to a removable Memory Card
 - Load from RAMCard
 - Load the internal RAM from a Memory Card
 - PCMCIA CARD
 - Removable device that allows you to backup or store the controller's internal memory
 - Each card holds one LCD Controller show

Updating Operating Systems Software

- Allows the O/S from one LCD Controller to be easily copied to another LCD Controller
- To execute an O/S Update,
 - Turn OFF the controller
 - Insert Memory Card with newer O/S version
 - Turn Power ON
 - Press ERASE key to install O/S when prompted
 - Press ERASE again to continue
 - Follow instructions displayed in LCD window

Saving to a RAMCard

- Press MENU
- Press CURSOR RIGHT arrow key to BACKUP submenu
- Press CURSOR DOWN key to view selections
- With MEM->CARD displayed in ALL CAPITALS,
 Press RECORD two times to save to RAMCard

NOTE: Always Lock the RAMCard after backing up the Controller's Memory



- Press MENU
- Press CURSOR RIGHT arrow key to BACKUP submenu
- Press CURSOR DOWN to view selections
- Press CURSOR RIGHT arrow key to CARD->MEM
- Press ERASE two times to load from RAMCard



Backing up the Controller

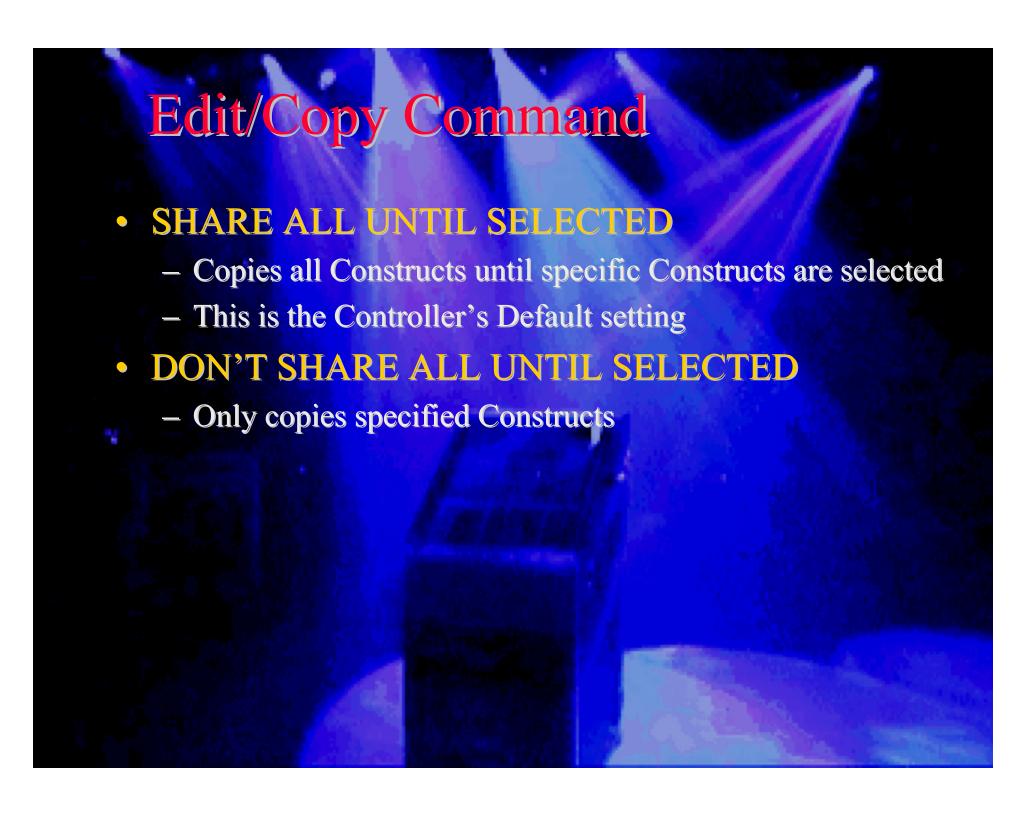
Backup the Memory of the Controller to a RAMCard

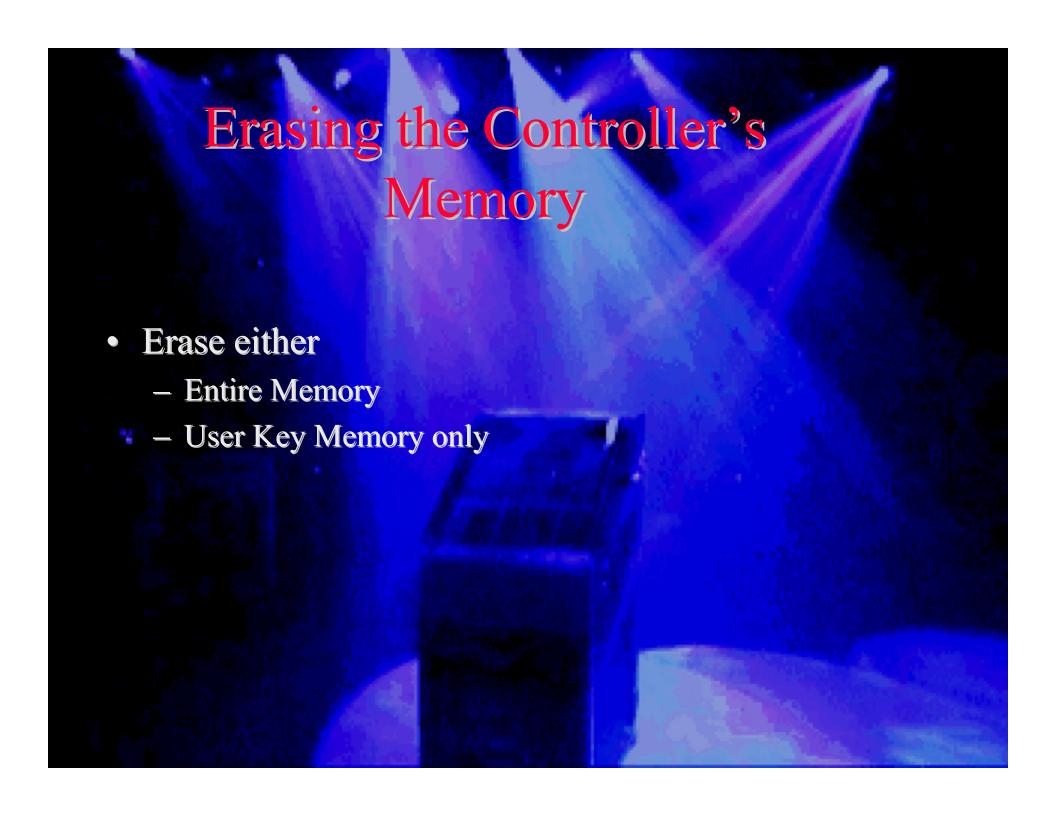
Submasters

- External Control board that lets you remotely adjust constructs in real time
- DIM, COLOR, & GOBO can be controlled
- 12 SUBMASTERS can be assigned
- Submaster control overrides the controller programming
- 2 modes:
 - PROPORTIONAL LEVEL: Submaster value is multiplied by the programmed fixture value
 - REMOTE LEVEL: Device with the higher level has control: "HTP"



- Set Device ID for Show Control operation
- Lock out Memories to prevent inadvertent editing
- Configure controller to use RS232 or MIDI port
- Configure the COPY Command Parameters
- Erase all of Controller's Memories
- Erase USER Keys (Restores to Pre-Programmed Audio Effects)







Erasing the Controller's Memory

- Erase the Memory of the Controller
- Load your show from RAMCard back into the Controller



Automatic All-Memory Playback*

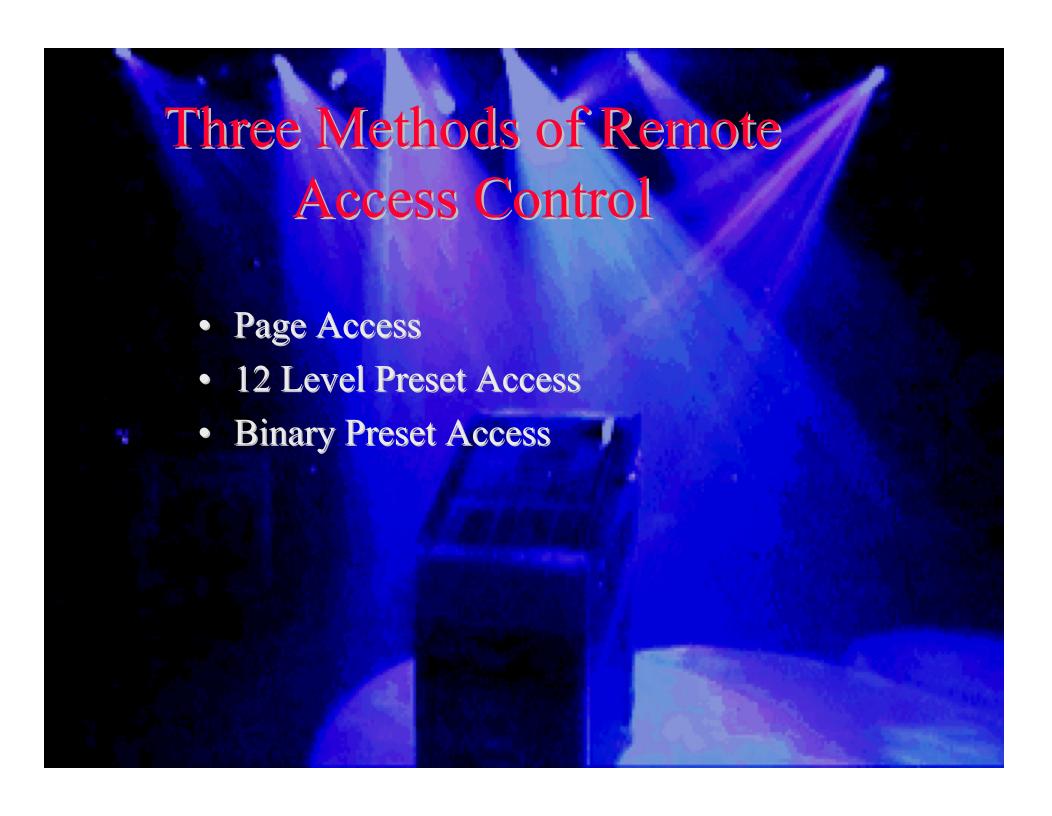
- Automatically sequences through all 99 PAGES in all 9 MEMORIES
- From ADDRESS Mode, Press CURSOR UP/DOWN arrow keys until "1-all" or "9-all" is displayed
- Press AUTO Button
- Adjust RATE knob
- To Stop the sequence, press AUTO again and select Memory 1-9

*Use this in conjunction with the Random Audio advance function



Remote Access Control

- Method of using a remote control device like a dimmer console or TD 12 to remotely access the LCD Controller's Memory
- 12 Channels are required on the remote device
- Connect the remote device using the ANALOG INPUT CONNECTORS on rear panel
- NOTE: Flashing STANDBY KEY LED indicates the controller is being controlled through the ANALOG INPUTS (when analog input is present)





- Personality B DIP Switches 3 & 5 "OFF"
- Allows you to remotely call up Pages from within the Memory that you first select on the Controller's front panel
- You can not remotely select Memories

Page Access Mode cont.

- Channels 1-12 correspond to PAGES 1-12
- Any simultaneous combination of 2 channels calls up the corresponding PAGE number (i.e., "3" and "7"= "37")
- Channel 10 is also a tens-times multiplier ("4" and "10"= "40")
- Channel 11 is also a number doubler ("5" and "11"="55")
- Channel 12 is also a number inverter ("6"& "5" & "12"="65")



Page Access

• Playback Pages 34, 40, 55, and 82 in Memory 1

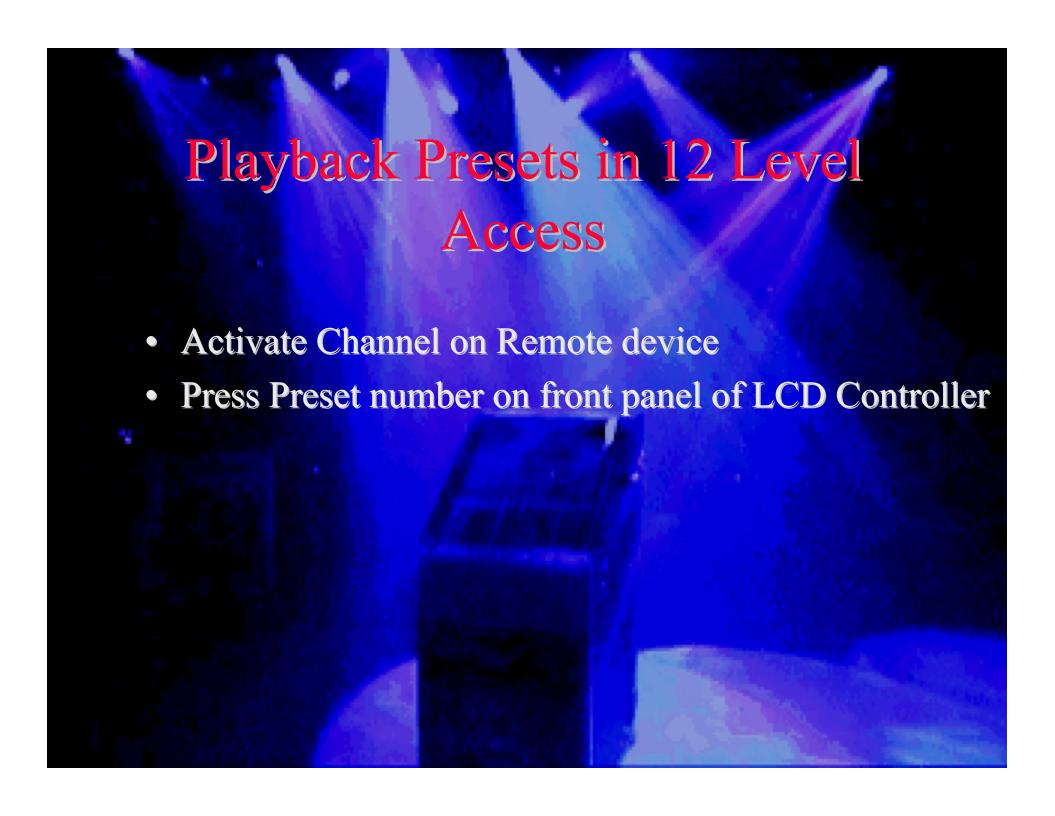


Recording Presets in 12 Level Access Mode

- First Method
 - Activate the Channel corresponding to the level you want
 - Select the Page or Pages to be recorded as a Preset
 - Press SELECT
 - Select the Preset number key to be recorded
 - Press RECORD

Recording Presets in 12 Level Access Mode

- Second Method
 - Choose Page to be recorded
 - Press SELECT
 - Activate a channel on the remote device corresponding to the level you want
 - Select a Preset number key on controller's front panel
 - Press RECORD



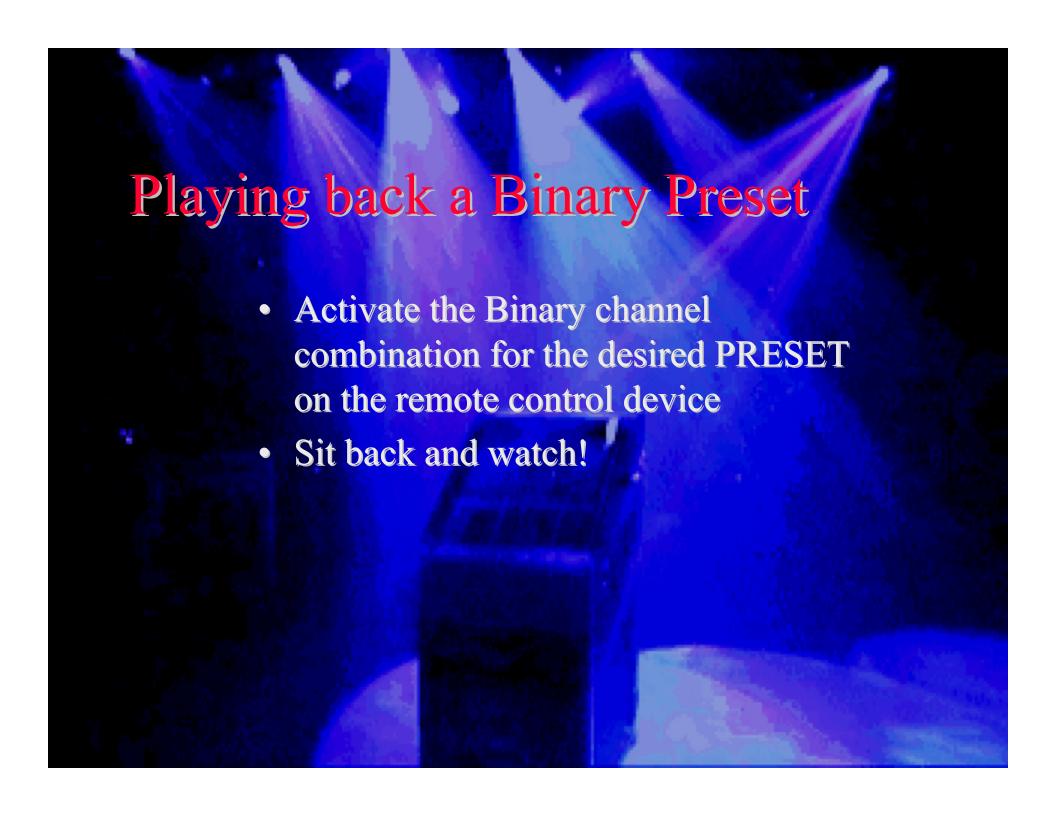


12 Level Preset Access

- Program a Preset on Level 2 Preset 1
- Program a Preset on Level 10 Preset 5
- Playback each Preset

Binary Preset Access Mode

- Expands controller's number of Presets to 1023
- Personality B DIP Switches "3" and "5"=ON
- To record a Binary Preset:
 - Toggle to Preset Mode
 - Select Page or Pages that you want to record as a Preset
 - Press SELECT Key
 - Activate any binary combination of channels 1-10
 - Select the lighted Preset number key on the LCD Controller
 - Press RECORD





Binary Preset Access

• Program Preset # 658



SYSTEMS

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